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OXC 4559
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1 MAR 1963

MEMORANDUM FOR: Chief, Development Division, OSA

SUBJECT: Possible Problem Areas in A-12 Vehicle Development

25X1A

1. During the three day staff A-12 ground school conducted [redacted] on the 12, 13, and 14 February 1963, several items were noted which would preclude present concept operational employment unless satisfactory fixes are made. While I am sure you are aware of these deficiences and are probably way ahead of me on the subject, it is appropriate to offer my observations for what they may be worth.

a. Oxygen System Capacity:

No oxygen duration charts presently available but preliminary information indicates only sufficient quantity for approximately 9 hours, based on a consumption rate of 12 - 15 liters per minute. Current rates of consumption by our pilots as determined by the assigned flight surgeon are averaging 22 liters per minute - or a little less than twice the amount used for computing the 9 hour duration figure.

b. J-58 Engine Oil Capacity:

Engine oil supply tanks have a capacity of 4½ gallons and a maximum allowable loss rate of ½ gallon per hour. At this rate only 9 hours of engine operation is possible to dry tanks. Further information was offered that they were having trouble keeping the oil consumption rate within the maximum allowable. This and the obvious fact that some margin of safety will be required points out the possible serious operational limitation which may be involved.

c. Nitrogen Purging or Inerting of Fuel Tanks:

System capacity is stated to be "sufficient for approximately 9 hours of flight, including two refueling

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operations". Since the nitrogen is vented overboard from empty or partially filled tanks as they are refueled, there is an inadequate supply to inert the tanks after the inflight refueling.

2. Additional areas of operational interest and concern are:

a. Special Fuel:

Meeting at AFLC, Wright-Patterson, surfaced and/or confirmed several anticipated problems which require attention, status resolution, and an evaluation of their affect on operational concepts. Principal questions are:

(1) Effect of A. R. fuel additives on quantity guages. This apparently is a problem for both the A-12 and KC-135.

(2) Freeze point of PF-1 fuel precludes use in wing tanks of KC-135 which can be lived with under current operational thinking. However, the increased flexibility and operational ranges of the tanker, if PF-1 freeze point can be lowered, undoubtedly would be very beneficial.

(3) Seals and sealants used in KC-135 have low tolerance for PF-1 fuel. Present position is that a maximum exposure of 72 hours without restoration by flushing with JP-4 is acceptable. This will result in considerable draining, flushing, etc. during the inevitable optional delays which will occur.

b. J-58 Engine Development:

F.O.D. and other problems seemingly have drastically reduced progress toward full utilization of this power plant. The associated delays have resulted in little progress in extending altitude and speed envelopes which in turn adversely affect proving performance data and progressive operational training.

c. While it is possible that things may be progressing satisfactorily in these areas, suggest that the time is rapidly approaching when final selections, firm suspense dates and an integrated configuration is established which freeze other associated equipment programs, i.e. I.N.S.,

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camera payload, map destruct, A.R., aircraft communications systems, ejection seats, integrated drift sight, autopilot, night lighting, radio antennas, etc.

3. Assuming no technical problems exist which cannot be resolved, these areas still must be studied and measured in the terms of combat readiness dates and possible program slippage.

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[redacted]

Chief, Operations Division, OSA

cc: AD/OSA

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OSA/OD/C/OXC/[redacted]:fc (27 Feb 63)

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